



#### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Nikolai Bock, et al.

Application No.: 09/746,565

Filed: December 21, 2000

For: CALIBRATION OF A/D CONVERTERS

BY REUSING CAPACITORS USED FOR

**SAMPLING** 

Group Art Unit: 2622

Examiner: Not Yet Assigned

## REVOCATION OF POWER OF ATTORNEY AND NEW POWER OF ATTORNEY

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JAN 2 3 2003

Commissioner for Patents Washington, DC 20231

**Technology Center 2600** 

Dear Sir:

The undersigned, a duly authorized representative of Micron Technology, Inc. and current assignee of this application as demonstrated by the attached copy of the assignment, hereby revokes all Powers of Attorney previously given, and hereby appoints the following attorneys and/or agents to prosecute this application and transact all business in the U.S. Patent and Trademark Office connected herewith:

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Donald A. Gregory	28,954	John C. Luce	34,378	Steven I. Weisburd	27,409
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Jon D. Grossman	32,699	Edward A. Meilman	24,735	Jeremy A. Cubert	40,399
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Docket No.: M4065.0758/P758 Application No.: 09/746,565

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attorneys/agents of Micron Technology, Inc. as its attorneys with full power of substitution to prosecute this application and to transact all business in the Patent and Trademark Office in connection therewith.

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For:

Micron Technology, Inc.

Dated: /-/y-03

JUN 10 2002

MAY 31, 2002

PTAS FISH & RICHARDSON, P.C. SAN DIEGO

Commissioner for Trademarks Arlington, VA 22202-3513 www.uspto.gov

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PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY N CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308⊊9723 PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFF ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 03/29/2002

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BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:

PHOTOBIT CORPORATION

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DOC DATE: 11/21/2001

JAN 2 3 2003

ASSIGNEE:

MICRON TECHNOLOGY, INC. 8000 S. FEDERAL WAY BOISE, IDAHO 83706-9632 **Technology Center 2600** 

SERIAL NUMBER: 09025079

PATENT NUMBER:

PATENT NUMBER:

FILING DATE: 02/17/1998

ISSUE DATE:

SERIAL NUMBER: 09031145

FILING DATE: 02/26/1998

ISSUE DATE:

SERIAL NUMBER: 09038888

FILING DATE: 03/11/1998

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SERIAL NUMBER: 09066506

FILING DATE: 04/23/1998

PATENT NUMBER:

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ISSUE DATE:

SERIAL NUMBER: 09359068

PATENT NUMBER:

SERIAL NUMBER: 09183389 FILING DATE: 10/29/1998 PATENT NUMBER: ISSUE DATE: SERIAL NUMBER: 09209982 FILING DATE: 12/09/1998 PATENT NUMBER: ISSUE DATE: SERIAL NUMBER: 09211718 FILING DATE: 12/14/1998 PATENT NUMBER: ISSUE DATE: SERIAL NUMBER: 09250623 FILING DATE: 02/16/1999 ISSUE DATE: PATENT NUMBER: SERIAL NUMBER: 09251758 FILING DATE: 02/18/1999 ISSUE DATE: 04/02/2002 PATENT NUMBER: 6365886 SERIAL NUMBER: 09252428 FILING DATE: 02/18/1999 PATENT NUMBER: 6388241 ISSUE DATE: 05/14/2002 SERIAL NUMBER: 09264501 FILING DATE: 03/08/1999 PATENT NUMBER: ISSUE DATE: SERIAL NUMBER: 09267503 FILING DATE: 03/12/1999 PATENT NUMBER: ISSUE DATE: SERIAL NUMBER: 09274739 FILING DATE: 03/23/1999 PATENT NUMBER: ISSUE DATE: SERIAL NUMBER: 09281358 FILING DATE: 03/30/1999 PATENT NUMBER: ISSUE DATE: SERIAL NUMBER: 09281361 FILING DATE: 03/30/1999 PATENT NUMBER: ISSUE DATE: SERIAL NUMBER: 09284765 FILING DATE: 06/17/1999 PATENT NUMBER: 6247873 ISSUE DATE: 06/19/2001 SERIAL NUMBER: 09298306 FILING DATE: 04/23/1999 PATENT NUMBER: ISSUE DATE: SERIAL NUMBER: 09299066 FILING DATE: 04/23/1999 PATENT NUMBER: ISSUE DATE: SERIAL NUMBER: 09354930 FILING DATE: 07/15/1999 ISSUE DATE: PATENT NUMBER: SERIAL NUMBER: 09359056 FILING DATE: 07/21/1999 PATENT NUMBER: ISSUE DATE: FILING DATE: 07/21/1999 SERIAL NUMBER: 09359065 PATENT NUMBER: ISSUE DATE:

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SERIAL NUMBER: PATENT NUMBER:		FILING DATE: ISSUE DATE:	06/05/2001
SERIAL NUMBER: PATENT NUMBER:	09901280	FILING DATE: ISSUE DATE:	07/09/2001
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SERIAL NUMBER: PATENT NUMBER:	08944794 6005619	FILING DATE: 10/06/1997 ISSUE DATE: 12/21/1999
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SERIAL NUMBER	: 09191201 : 6191714	FILING DATE: 11/12/1998 ISSUE DATE: 02/20/2001
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SERIAL NUMBER	: 09304526 : 6211804	FILING DATE: 05/04/1999 ISSUE DATE: 04/03/2001
SERIAL NUMBER	: 09316701 : 6097545	FILING DATE: 05/21/1999 ISSUE DATE: 08/01/2000
SERIAL NUMBER	: 09357605 : 6229134	FILING DATE: 07/20/1999 ISSUE DATE: 05/08/2001
SERIAL NUMBER	: 09378565	FILING DATE: 08/19/1999

ISSUE DATE: 05/29/2001

JEFFREY OLSEN, EXAMINER ASSIGNMENT DIVISION OFFICE OF PUBLIC RECORDS

PATENT NUMBER: 6239456

04-11-2002

RECC



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Commissioner for Patents: Please record the attached original docume	nt(s) or copy(ies).			
1. Name of conveying party(ies):	2. Name and address of receiving party(ies):			
Photobit Corporation 3-29-52	Micron Technology, Inc.  8000 S. Federal Way Boise ID 83706-9632			
135 North Los Robles Avenue, 7th Floor	8000 S. Federal Way			
Pasadena, California 91101	Boise ID 83706-9632			
Additional name(s) attached? ☐ Yes 图 No	FUTLIS RECORD  29 MM 9: 58  CE SECTION			
3. Nature of conveyance:	<u>.</u> 5 33			
☑ Assignment	REC 9:			
☐ Merger ☐ Security Agreement	FION			
☐ Change of Name	4 8 RC			
☐ Other:	(x)			
Execution Date: November 21, 2001	Additional names/addresses attached? ☐ Yes ☒ No			
4. Application number(s) or patent number(s):				
If this document is being filed with a new application, the execution	date of the application is:			
A. Patent Application No(s).:	B: Patent No(s).:			
SEE SCHEDULE <u>A</u> ATTACHED	SEE SCHEDULE <b>B</b> ATTACHED			
Additional numbers att	ached? ☐ Yes 図 No			
<ol><li>Name/address of party to whom correspondence concerning document should be mailed:</li></ol>	6. Total number of applications/patents involved: 107			
PTO CUSTOMER NO 20985	7. Total fee (37 CFR §3.41): \$4280			
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SCOTT C. HARRIS	☐ Authorized to charge Deposit Account.			
Fish & Richardson P.C. 4350 La Jolla Village Drive, Suite 500	8. Deposit Account No.: 06-1050			
San Diego, California 92122	Please apply any additional charges, or any credits, to our Deposit Account No. 06-1050.			
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Jere Halligan
Typed Name of Person Signing Certificate

## SCHEDULE A

Docket No.	Filing Date	Serial No.
08305/017001	2/17/1998	09/025,079
08305/004001	2/26/1998	09/031,145
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## SCHEDULE B

Docket N .	Filing Date	Serial N .	Issue Date	Patent N .
08305/003001	9/30/1996	08/723,897	11/30/1999	5,995,163
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08305/045001	8/19/1999	09/378,565	5/29/2001	6,239,456

#### ASSIGNMENT OF PATENTS

This ASSIGNMENT OF PATENTS (this "Assignment of Patents"), dated as of November 21, 2001, is entered into by and among Micron Technology, Inc., a Delaware corporation ("Buyer"), Photobit Corporation, a Delaware corporation ("Parent"; Parent is sometimes referred to herein as a "Seller") and Photobit Technology Corporation, a Delaware corporation and a wholly owned subsidiary of Seller ("Subsidiary"; Parent and Subsidiary are sometimes referred to herein as a "Seller" and sometimes collectively as the "Sellers").

This Assignment of Patents is entered into pursuant to Section 6.23 of the Asset Purchase Agreement dated as of November 21, 2001, (the "Asset Purchase Agreement;" capitalized terms used herein but not otherwise defined herein shall have the same meanings assigned to them in the Asset Purchase Agreement), by and among Parent, Subsidiary, Buyer, Dr. Sabrina Kemeny, Dr. Eric Fossum, Robert Panicacci and the Seller Representative.

Pursuant to the Asset Purchase Agreement, Sellers agreed, among other things, to transfer to Buyer all of Sellers' right, title and interest in and to the Acquired Assets, in exchange for the payment by Buyer of the Purchase Price and the assumption by Buyer of the Assumed Liabilities, in each case on the terms and subject to the conditions provided in the Asset Purchase Agreement.

- Assignment of Patents by Sellers. Sellers hereby irrevocably and formally grant, bargain, sell, transfer, convey, assign and deliver to Buyer all right, title and interest in and to the patents, patent applications and provisional applications owned by each Seller throughout the world, together with any and all rights of such Seller associated with inventions claimed therein and/or with the applications and patents, whether or not such patents are registered with the United States Patent and Trademark Office or other comparable governmental authority of any foreign jurisdiction (including, without limitation, those patents and applications set forth on Exhibit A hereto) (the "Assigned Patents"), free and clear of all encumbrances, together with all causes of action and other rights to sue for and remedies against past, present and future infringements of any of the foregoing, together with the right to collect damages therefore, and rights of priority and protection of interests therein under the laws of any jurisdiction worldwide and all tangible embodiments thereof, to have and to hold the same unto Buyer, its successors and assigns, for and during the existence of such rights and all renewals thereof.
- 2. <u>Further Assurances</u>. Each Seller hereby covenants and agrees that from time to time and at the expense of such Seller and without further consideration, upon request of Buyer, each Seller shall and shall cause each of its affiliates to execute and deliver such instruments and documents, and take such further actions, as Buyer reasonably may request in order to sell, convey, transfer and assign to Buyer, or to record Buyer's interest in or title to, any of the Assigned Patents.
- 3. <u>Power of Attorney</u>. Each Seller hereby constitutes and appoints Buyer as such Seller's true and lawful attorney in fact, with full power of substitution in such Seller's name and

stead, to take any and all steps, including proceedings at law, in equity or otherwise, to execute, acknowledge and deliver any and all instruments and assurances necessary or expedient in order to vest or perfect the aforesaid rights and causes of action more effectively in Buyer or to protect the same or to enforce any claim or right of any kind with respect thereto. Each Seller hereby declares that the foregoing power is coupled with an interest and as such is irrevocable.

- 4. <u>Successors and Assigns</u>. This Assignment of Patents shall be enforceable against the successors and assigns of Sellers and shall inure to the benefit of the successors and assigns of Buyer.
- 5. Governing Law. This Assignment of Patents shall be governed by and construed in accordance with the laws of the United States, in respect to patent issues and in all other respects, including as to validity, interpretation and effect, by the internal laws of the State of California, without giving effect to the conflict of laws rules thereof.

IN WITNESS WHEREOF, this Assignment of Patents has been duly executed and delivered as of the date first written above.

MICRON TECHNOLOGY, INC.
By: 25. Sorul
Printed Name: W.G. StovER, JR
Title: Vier PRESIDENT OF FINANCE AND C.F.O.
PHOTOBIT CORPORATION
Ву:
Printed Name:
Title:
PHOTOBIT TECHNOLOGY CORPORATION
Ву:
Printed Name:
Title:

IN WITNESS WHEREOF, this Assignment of Patents has been duly executed and delivered as of the date first written above.

MICRON TECHNOLOGY, INC.
By:
Printed Name:
Title:
PHOTOBIT CORPORATION
By: Deligation
Printed Name: SABRINA KEMENY
Title: CFO
PHOTOBIT TECHNOLOGY CORPORATION
By: Jeli Day
Printed Name: SABRINA KEMENY
Title: EXECUTIVE V. P.

#### ACKNOWLEDGMENT - PHOTOBIT CORPORATION

STATE OF CALIFORNIA	)
	) SS:
COUNTY OF SAN FRANCISCO	)

I, <u>Teresa Solis</u>, a Notary Public in and for said County, in the State aforesaid, DO HEREBY CERTIFY that <u>Sabrina Kemeny</u>, appeared before me this day in person, and acknowledged that she executed and delivered the Instrument of Assignment of Patents above as her free and voluntary act and in her representative capacity for Photobit Corporation, a Delaware corporation, acting in its representative capacity as the Chairman and CEO of Photobit Corporation, a Delaware corporation, for the uses and purposes herein set forth.

IN WITNESS WHEREOF, I have hereunto my hand and notarial seal this 21st day of November 2001.

TERESA SOLIS
COMM. \$ 1237290
City & County of San Francisco (COMM. EXP. OCT. 22, 2003

My Commission Expires: October 22, 2003

#### ACKNOWLEDGMENT-PHOTOBIT TECHNOLOGY CORPORATION

STATE OF CALIFORNIA	)
	) SS:
COUNTY OF SAN FRANCISCO	)

I, <u>Teresa Solis</u>, a Notary Public in and for said County, in the State aforesaid, DO HEREBY CERTIFY that <u>Sabrina Kemeny</u>, appeared before me this day in person, and acknowledged that she executed and delivered the Instrument of Assignment of Patents above as her free and voluntary act and in her representative capacity for Photobit Technology Corporation, a Delaware corporation, acting in their representative capacity as the Chairman and CEO of Photobit Technology Corporation, a Delaware corporation, for the uses and purposes herein set forth.

IN WITNESS WHEREOF, I have hereunto my hand and notarial seal this 21st day of November 2001.

TERESA SOLIS
COMM: # 1237290
NOTARY PUBLIC-CALIFORNIA 0
City & County of San Francisco ()
COMM. EXP. OCT. 22, 2003

My Commission Expires: October 22, 2003

#### EXHIBIT A

Photobit Patents Issued and Pending Applications.

	Photobit Patent or Provisional Application Title	Description/Comments	PB NTR#
	PATENTS ISSUED		
1	Median Filter With Embedded Analog to Digital Converter	Patent #5,995,163	9601
2	Low-Voltage Common Source Switched-Capacitor Amplifier	Patent #6,049,247	9702
3	Quantum Efficiency Improvements in Active Pixel Sensors	Patent #6,005,619	9704
4	Bidirectional Follower for Driving a Capacitive Load	Patent #6,043,690	9719
5	Analog-to-Digital Conversion	Patent #6,087,970	9603
6	Low-Voltage Comparator with Wide Input Voltage Swing	Patent #6,147,519	9703
7	Programmable Analog Anthmetic Circuit for Imaging Sensor	Patent #6,166,367	9706
8	Correction of Missing Codes Nonlinearity in A to D Converters	Patent #6,255,970	9708
9	Charge-Domain Analog Readout for an Image Sensor	Patent #6,222,175	9712
10	A/D Converter Correction Scheme	Patent #6,191,714	9713
11	Active Pixel Sensor With Current Mode Readout	Patent #6,194,696	9714
12	Differential Non-Linearity Correction Scheme	Patent #6,215,428	9716
13	CMOS Image Sensor with Different Pixel Sizes for Different Colors	Patent #6,137,100	9718
14	Pulse-Controlled Light Emitting Diode Source	Patent #6,222,172	9801
15	CMOS Voltage Comparator Capable of Operating With Small Input Voltage Difference	Patent #6,184,721	9809
16	Using Single Lookup Table To Correct Differential Non-Linearity Errors In An Array Of A/D Converters	Patent #6,211,804	9813
17	Concentric Lens with Aspheric Correction	Patent #6,097,545	9816
18	Using Cascaded Gain Stages for High-Gain and High-Speed Readout of Pixel Sensor Data	Patent #6,229,134	9817
19	Lock-In Pinned Photodiode Photo-detector	Patent #6,239,456	9822
20	Ping-Pong Readout	Patent #6,204,792	9828
21	Nonlinear Flash Analog To Digital Converter Used In Active Pixel System	Patent #6,295,013	9818 9819
	PHOTOBIT/GENTEX JOINTLY OWNED IP		
1	Wide Dynamic Range Optical Sensor	Patent #6,008,486	
2	Vehicle Vision System	Patent Application Serial No. 09/001,855	
	PATENT APPLICATIONS		
1	Dead Pixel Correction by Row/Column Substitution	Patent Application Serial No. 09/031,145	9602
2	Color Interpolation	Patent Application Serial No. 09/028,961	9604
3	Double Comparison Successive Approximation Method and Apparatus	Patent Application Serial No. 09/360,294	9701
4	Digital Exposure Circuit For An Image Sensor	Patent Application Senal No. 09/298,306	9705
5	Method and Circuit for Fast and Accurate Adjustment of Integration Time for CMOS APS Cameras	Patent Application Serial No. 09/281,765	9707
6	Smart Column Controls for High Speed Multi-Resolution Sensors	Patent Application Serial No. 09/251,758	9709
7	Increasing Readout Speed in CMOS APS Sensors through Block Readout	Patent Application Serial No. 09/274,739	9710
8	Active Pixel Color Linear Sensor With Line-Packed Pixel Readout	Patent Application Serial No. 09/252,428	9711
9	Three Sided Buttable CMOS Image Chip	Patent Application Serial No. 09/211,718	9715

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	$\Box$	Photobit Patent or Provisional Application Title	Description/Comments	PB NTR #
	10	Photodiode-Type Pixel For Global Electronic Shutter And Reduced Lag	Patent Application Serial No. 09/025,079	9717
	11	Wide Dynamic Range Fusion Using External Memory Look-Up	Patent Application Serial No. 09/299,066	9720
	12	Active Pixel Sensor With Mixed Analog and Digital Signal Integration	Patent Application Serial No. 09/183,389	9721
	13	Look Ahead Shutter Pointer Allowing Real Time Exposure Control	Patent Application Serial No. 09/038,888	9802
	14	Readout Circuit With Gain and Analog-to-Digital Conversion For Image Sensor	Patent Application Serial No. 09/264,501	9803
	15	Using A Single Control Line To Provide Select And Reset Signals In Two Rows Of A Digital Imaging Device	Patent Application Serial No. 09/250,623	9804
	16	High Resolution CMOS Circuit Using a Matched Impedance Output Transmission Line	Patent Application Serial No. 09/359,056	9806
	17	Reducing Internal Bus Speed in a Bus System Without Reducing Readout Rate	Patent Application Serial No. 09/359,068	9807
•	18	RAM Line Storage for Fixed Pattern Noise Correction	Patent Application Serial No. 09/066,506	9808
	19	Latched Row Logic for a Rolling Exposure Snap	Patent Application Serial No. 09/261,361	9810 9812
	20	Analog To Digital Converter with Internal Data Storage	Patent Application Serial No. 09/281,358	9811
	21	Low Light Sensor Signal to Noise Improvement	Patent Application Serial No. 09/359,065	9814
	22	Nonlinear Flash Analog to Digital Converter Used in Active Pixel System	Patent Application Serial No. 09/161,355	9818 9819
	23	Oversampled Centroid A to D Converter	Patent Application Serial No. 09/430,825	9820
	24	Over Sampled CMOS Image Sensor	Patent Application Serial No. 09/429,776	9821
	25 26	Pinned Floating Photoreceptor With Active Pixel Sensor  Oversampled CMOS Image Sensor	Patent Application Serial No. 09/397,381 Patent Application	9824
	27	Optical Range Finder	Serial No. 09/430,734 Patent Application	9825
	28	Color Correction of Multiple Colors Using A Calibrated Technique	Serial No. 09/429,882 Patent Application	9826
	29	Micro Power Micro-Sized CMOS Active Pixel	Serial No. 09/209,982 Patent Application	9827
	30	ALow Power Signal Chain for Image Sensors CMOS APS	Serial No. 09/418,961 Patent Application	9829
	31	Matched Color CMOS Sensor	Serial No. 09/590,785 Patent Application Serial No. 09/267,503	9831
	32	Clear Plastic Packaging in a CMOS Active Pixel Image	Patent Application Serial No.	9832
	33	Semiconductor Imaging Sensor Array Devices With Dual-Port Digital Readout for CMOS	09/442,871 Patent	9833
		Image Sensor	Application Serial No. 09/449,194	
	34	High-Speed Sampling Of Signals In Active Pixel Sensors	Patent Application Serial No.	9834
	35	Multi-Chip Addressing For The I <sup>2</sup> C Bus	09/527,422 Patent	9835
			Application Serial No.	
	36	Circuits larger than the max. Reticle size in deep sub micron process	09/459,720 Patent Application	9836
			Serial No. 09/523,127	
	37	Compensation for Optical Distortion at Imaging Plane	Patent Application Serial No. 09/354,930	9837
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Photobit Patent or Provisional Application Title  Patent Application Serial No. 09/470.284  Patent Application Serial No. 09/4750.455  Patent Application Serial No. 09/475.285  Patent Application Serial No. 09/452.285  Patent Application Serial No. 09/453.380  Patent Application Serial No. 09/467.285  Patent Application Serial No. 09/467.285  Patent Application Serial No. 09/569,895  Patent Application Serial No. 09/569,895  Patent Application Serial No. 09/687,285  Patent Application Se	PB NTR #  9839  9901  9902  9903  9904  9905  9906  9907  9908  9909  9910  9912  9915  9916  9917  9918  9922  9923
PRIORITY PARENT OF PROVISIONAL Application Serial No. 09/470,284  Patent Application Serial No. 09/470,284  A Technique For Flagging Oversaturated Pixels  Patent Application Serial No. 09/505,645  Patent Application Serial No. 09/505,645  Active Pixel Sensor With Fully-Depleted Buried Photoreceptor  Patent Application Serial No. 09/516,433  An Analog Solution for Oversaturated Pixel Problem  Patent Application Serial No. 09/516,433  An Analog Solution for Oversaturated Pixel Problem  Patent Application Serial No. 09/522,286  Patent Application Serial No. 09/595,292  Patent Application Serial No. 09/595,992  Patent Application Serial No. 09/596,592  Patent Application Serial No. 09/596,592  Patent Application Serial No. 09/596,592  Patent Application Serial No. 09/598,592  Patent Application Serial No. 09/598,592  Patent Application Serial No. 09/598,593  Patent Application Serial No. 09/583,643  Patent Application Serial No. 09/588,643  Patent Application Serial No. 09/588,645  Patent Application Serial No. 09/588,645  Patent Application Serial No. 09/588,645  Pat	9839 9901 9902 9903 9904 9905 9906 9907 9908 9909 9910 9912 9915 9918 9918
Serial No. 09/470,284  38 Backside Illumination of CMOS Image Sensor  Patent Application Serial No. 09/483,362  40 A Technique For Flagging Oversaturated Pixels  Patent Application Serial No. 09/505,843  41 Diagonalized Image Sensor Pixels For Improved Effective Performance  Patent Application Serial No. 09/507,555  42 Active Pixel Sensor With Fully-Depleted Buried Photoreceptor  Patent Application Serial No. 09/507,555  43 An Analog Solution for Oversaturated Pixel Problem  Patent Application Serial No. 09/518,433  Patent Application Serial No. 09/522,287  44 Superposed Multi-Junction Color APS  Patent Application Serial No. 09/519,830  45 Multi Junction APS with Dual Simultaneous Integration  Patent Application Serial No. 09/519,830  46 A Novel idea for a New Readout Structure of APS  Patent Application Serial No. 09/519,830  47 Increasing Pixel Conversion Gain in CMOS Image Sensors  Patent Application Serial No. 09/533,860  48 Dual Sensitivity Image Sensor  Patent Application Serial No. 09/533,860  49 Layout Technique For Semiconductor Processing Using Stitching  Patent Application Serial No. 09/581,769  50 Active Pixel Sensor with Reduced Fixed Pattern Noise  Fatent Application Serial No. 09/588,757  51 Low Voltage Analog-To-Digital Converters With Internal Reference Voltage and Offset  Patent Application Serial No. 09/588,043  Patent Application S	9901 9902 9903 9904 9905 9906 9907 9908 9909 9910 9912 9915 9915 9918 9918
A Technique For Flagging Oversaturated Pixels  Patent Application Serial No. 09/505,645  Patent Application Serial No. 09/505,645  Patent Application Serial No. 09/507,565  Active Pixel Sensor With Fully-Depleted Buried Photoreceptor  Patent Application Serial No. 09/507,565  Patent Application Serial No. 09/507,565  Patent Application Serial No. 09/518,433  An Analog Solution for Oversaturated Pixel Problem  Patent Application Serial No. 09/518,433  Patent Application Serial No. 09/522,287  Patent Application Serial No. 09/522,286  Patent Application Serial No. 09/522,286  Patent Application Serial No. 09/518,930  Patent Application Serial No. 09/595,592  Patent Application Serial No. 09/595,592  Patent Application Serial No. 09/595,592  Patent Application Serial No. 09/595,598  Patent Application Serial No. 09/595,598  Patent Application Serial No. 09/596,726  Patent Application Serial No. 09/598,737  Patent Application Serial No. 09/598,736  Cative Pixel Sensor with Reduced Fixed Pattern Noise  Patent Application Serial No. 09/598,736  Patent Application Serial No. 09/588,643  Patent Application Serial No. 09/588,643  Patent Application Serial No. 09/588,6403  Patent Application Serial No. 09/588,8403  Patent Application Serial No. 09/588,8403  Patent Application Serial No. 09/588,855  Patent Application Serial No. 09/588,855  Patent Application Serial No. 09/78,555  Patent Application Serial No. 09/588,8403  Patent Application Serial	9902 9903 9904 9905 9906 9907 9908 9909 9910 9912 9915 9916 9917 9918
A Technique For Flagging Oversaturated Pixels  Patent Application Serial No. 09/505.645  Patent Application Serial No. 09/505.645  Patent Application Serial No. 09/507.565  A Active Pixel Sensor With Fully-Depleted Buried Photoreceptor  Patent Application Serial No. 09/518.433  An Analog Solution for Oversaturated Pixel Problem  Patent Application Serial No. 09/518.433  Patent Application Serial No. 09/522.267  Patent Application Serial No. 09/522.267  Patent Application Serial No. 09/522.268  Multi Junction APS with Dual Simultaneous Integration  A Novel idea for a New Readout Structure of APS  Patent Application Serial No. 09/595.992  Patent Application Serial No. 09/598.797  Patent Application Serial No. 09/598.797  Patent Application Serial No. 09/598.797  Patent Application Serial No. 09/598.798  Patent Application Serial No. 09/588.798  Patent Application Serial No. 09/588.893  Patent Application Serial No. 09/588.893  Patent Application Serial No. 09/588.893  Patent Application Serial No. 09/688.3527  Patent Application Serial No. 09/684.803  Patent Application Serial No. 09/684.803  Patent Application Serial No. 09/784.655  Patent Application Serial No. 09/748.655  Patent Application Serial No. 09/745.655	9903 9904 9905 9906 9907 9908 9909 9910 9912 9915 9918 9918 9922
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An Analog Solution for Oversaturated Pixel Problem Superposed Multi-Junction Color APS Patent Application Serial No. 09/522,286  Multi Junction APS with Dual Simultaneous Integration Patent Application Serial No. 09/519,930  A Novel idea for a New Readout Structure of APS Patent Application Serial No. 09/519,930  Increasing Pixel Conversion Gain In CMOS Image Sensors Patent Application Serial No. 09/595,592  Increasing Pixel Conversion Gain In CMOS Image Sensors Patent Application Serial No. 09/595,3920  Patent Application Serial No. 09/598,757  Patent Application Serial No. 09/598,757  Ago Layout Technique For Semiconductor Processing Using Stitching Patent Application Serial No. 09/687,288  Layout Technique For Semiconductor Processing Using Stitching Patent Application Serial No. 09/687,288  Low Voltage Analog-To-Digital Converters With Internal Reference Voltage and Offset Patent Application Serial No. 09/530,043  Techniques to Increase Signal Dynamic Range in CMOS APS Patent Application Serial No. 09/533,043  Patent Application Serial No. 09/533,043  Calibration Circuit for Successive Approximation ADC. Patent Application Serial No. 09/546,565  P-Type Reset/Readout Circuitry for Radiation Hard APS Patent Application Serial No. 09/746,565	9906 9907 9908 9909 9910 9912 9915 9916 9917 9918
44 Superposed Multi-Junction Color APS 45 Multi Junction APS with Dual Simultaneous Integration 46 A Novel Idea for a New Readout Structure of APS 46 A Novel Idea for a New Readout Structure of APS 47 Increasing Pixel Conversion Gain In CMOS Image Sensors 48 Dual Sensitivity Image Sensor 48 Dual Sensitivity Image Sensor 49 Layout Technique For Semiconductor Processing Using Stitching 50 Active Pixel Sensor with Reduced Fixed Pattern Noise 51 Low Voltage Analog-To-Digital Converters With Internal Reference Voltage and Offset 52 Techniques to Increase Signal Dynamic Range in CMOS APS 53 Low Power Analog-To-Digital Conversion 54 Calibration Circuit for Successive Approximation ADC. 55 P-Type Reset/Readout Circuitry for Radiation Hard APS 56 Novel Lenses Using Coherent Optical Fiber Bundles 57 Dynamic Histogram Equalifzation for High Dynamic Range Images 58 Patent Application Serial No. 09/78, 151	9907 9908 9909 9910 9912 9915 9916 9917 9918
Multi Junction APS with Dual Simultaneous Integration  A Novel Idea for a New Readout Structure of APS  Patent Application Serial No. 09/595,992  Increasing Pixel Conversion Gain In CMOS Image Sensors  Patent Application Serial No. 09/595,992  Increasing Pixel Conversion Gain In CMOS Image Sensors  Patent Application Serial No. 09/598,980  Patent Application Serial No. 09/598,757  Juncture Pixel Sensor With Reduced Processing Using Stitching  Active Pixel Sensor with Reduced Fixed Pattern Noise  Active Pixel Sensor with Reduced Fixed Pattern Noise  Active Pixel Sensor with Reduced Fixed Pattern Noise  Patent Application Serial No. 09/550,816  Low Voltage Analog-To-Digital Converters With Internal Reference Voltage and Offset  Techniques to Increase Signal Dynamic Range in CMOS APS  Patent Application Serial No. 09/538,043  Patent Application Serial No. 09/528,310  Calibration Circuit for Successive Approximation ADC.  Patent Application Serial No. 09/528,310  Patent Application Serial No. 09/728,310  Patent Application Serial No. 09/748,4555  Patent Application Serial No. 09/745,854  Dynamic Histogram Equalifzation for High Dynamic Range Images  Patent Application Serial No. 09/775,151	9908 9909 9910 9912 9915 9915 9916 9917
A Novel idea for a New Readout Structure of APS  Patent Application Serial No. 09/595,592  Patent Application Serial No. 09/595,592  Patent Application Serial No. 09/553,980  Patent Application Serial No. 09/553,980  Patent Application Serial No. 09/596,757  Patent Application Serial No. 09/584,756  Layout Technique For Semiconductor Processing Using Stitching  Patent Application Serial No. 09/687,266  Active Pixel Sensor with Reduced Fixed Pattern Noise  Patent Application Serial No. 09/585,0816  Low Voltage Analog-To-Digital Converters With Internal Reference Voltage and Offset  Patent Application Serial No. 09/538,043  Patent Application Serial No. 09/533,043  Patent Application Serial No. 09/683,527  Patent Application Serial No. 09/683,527  Calibration Circuit for Successive Approximation ADC.  Patent Application Serial No. 09/728,310  Patent Application Serial No. 09/748,565  P-Type Reset/Readout Circuitry for Radiation Hard APS  Patent Application Serial No. 09/648,403  Patent Application Serial No. 09/648,403  Patent Application Serial No. 09/648,403  Patent Application Serial No. 09/748,555  Dynamic Histogram Equalifzation for High Dynamic Range Images  Patent Application Serial No. 09/776,151	9909 9910 9912 9915 9916 9917 9918
1 Increasing Pixel Conversion Gain In CMOS Image Sensors 1 Patent Application Serial No. 09/553,880 2 Patent Application Serial No. 09/598,757 3 Patent Application Serial No. 09/687,288 3 Active Pixel Sensor with Reduced Fixed Pattern Noise 3 Active Pixel Sensor with Reduced Fixed Pattern Noise 4 Patent Application Serial No. 09/687,288 5 Patent Application Serial No. 09/550,816 5 Patent Application Serial No. 09/550,816 5 Patent Application Serial No. 09/553,843 5 Patent Application Serial No. 09/653,527 5 Patent Application Serial No. 09/653,527 5 Low Power Analog-To-Digital Conversion 5 Patent Application Serial No. 09/653,527 5 Patent Application Serial No. 09/528,310 5 P-Type Reset/Readout Circuitry for Radiation Hard APS 5 Patent Application Serial No. 09/746,585 5 Patent Application Serial No. 09/745,854 5 Poynamic Histogram Equalifzation for High Dynamic Range Images 5 Patent Application Serial No. 09/745,854	9910 . 9912 9915 9916 9917 9918
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Layout Technique For Semiconductor Processing Using Stitching  Patent Application Serial No. 09/687,268  Active Pixel Sensor with Reduced Fixed Pattern Noise  Patent Application Serial No. 09/550,818  Low Voltage Analog-To-Digital Converters With Internal Reference Voltage and Offset  Patent Application Serial No. 09/538,043  Patent Application Serial No. 09/538,043  Patent Application Serial No. 09/653,527  Low Power Analog-To-Digital Conversion  Patent Application Serial No. 09/528,310  Calibration Circuit for Successive Approximation ADC.  Patent Application Serial No. 09/745,655  P-Type Reset/Readout Circuitry for Radiation Hard APS  Novel Lenses Using Coherent Optical Fiber Bundles  Patent Application Serial No. 09/745,854  Dynamic Histogram Equalifzation for High Dynamic Range Images  Patent Application Serial No. 09/778,151	9918 9917 9918
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Serial No. 09/550,816  Low Voltage Analog-To-Digital Converters With Internal Reference Voltage and Offset  Patent Application Serial No. 09/538,043  Techniques to Increase Signal Dynamic Range in CMOS APS  Low Power Analog-To-Digital Conversion  Calibration Circuit for Successive Approximation ADC.  Patent Application Serial No. 09/528,310  Patent Application Serial No. 09/745,565  P-Type Reset/Readout Circuitry for Radiation Hard APS  Patent Application Serial No. 09/746,565  Patent Application Serial No. 09/648,403  Patent Application Serial No. 09/745,854  Dynamic Histogram Equalifzation for High Dynamic Range Images  Patent Application Serial No. 09/778,151	9922
Serial No. 09/538,043  52 Techniques to Increase Signal Dynamic Range in CMOS APS  Patent Application Serial No. 09/653,527  53 Low Power Analog-To-Digital Conversion  Patent Application Serial No. 09/528,310  54 Calibration Circuit for Successive Approximation ADC.  Patent Application Serial No. 09/746,565  P-Type Reset/Readout Circuitry for Radiation Hard APS  Patent Application Serial No. 09/648,403  Patent Application Serial No. 09/648,403  Patent Application Serial No. 09/745,854  Dynamic Histogram Equalifzation for High Dynamic Range Images  Patent Application Serial No. 09/778,151	
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Serial No. 09/528,310  54 Calibration Circuit for Successive Approximation ADC.  Patent Application Serial No. 09/746,565  P-Type Reset/Readout Circuitry for Radiation Hard APS  Patent Application Serial No. 09/648,403  Serial No. 09/648,403  Patent Application Serial No. 09/745,854  Patent Application Serial No. 09/745,854  Patent Application Serial No. 09/775,151	<u> </u>
Serial No. 09/746,565  P-Type Reset/Readout Circuitry for Radiation Hard APS  Patent Application Serial No. 09/648,403  Novel Lenses Using Coherent Optical Fiber Bundles  Patent Application Serial No. 09/745,854  Dynamic Histogram Equalifzation for High Dynamic Range Images  Patent Application Serial No. 09/778,151	9926
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62 A New Frame-Shutter Pixel Structure with an Isolated Storage Node Patent Application Serial No. 09/792,634	9945
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68	Image Sensing System With Histogram Modification	Patent Application Serial No. 09/761,218	2012
69	Image Sensor Having Boostted Reset	Patent Application Serial No. 09/917,195	2014 2015
70	A High-Speed Analog-To-Digital Converter Using Multiple Staggered Successive Approximation Cells	Provisional Patent Application Serial No. 60/243,324	2016
71	White Spot Reduction For CMOS Imaging	Provisional Patent Application Serial No. 60/243,328	2017
72	New Architecture For High-Speed ADC Using Multiple Successive Approximation Cells	Provisional Patent Application Serial No. 60/253,430	2019
73	CMOS Sensor With Dual Column Parallel Analog-To-Digital Converters	Provisional Patent Application Serial No. 60/313,117	2020
74	Reference Voltage Circuit For Differential Analog-To-digital Converter (ADC)	Provisional Patent Application Serial No. 60/247,401	2021
75	Pseudo Random Assignment To Remove FPN Of High-Speed ADC Using Multiple Successive Approximation Cells	Provisional Patent Application Serial No. 60/306,753	2022
76	Frame-Scale Package	Provisional Patent Application Serial No. 60/245,085	2024
77	Black-Level Compensation With On-Chip successive Approximation ADC	Provisional Patent Application Serial No. 60/244,412	. 2025
78	An Improved Frame Shutter For CMOS APS	Provisional Patent Application Serial No. 60/243,899	2026
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81	Power Optimization For Class A Amplifier With Variable Signal Gain By matching Of Unity Gain Bandwidth To the Demanded Gain	Provisional Patent Application Serial No. 60/285,431	2029
82	Dynamic Range Extension In Color CMOS Active Pixel Sensors	Provisional Patent Application Serial No. 60/259,352	2030
83	Reducing Power Consumption And Noise In CMOS APS Sensor Through Block Read-Out	Patent Application Serial No. 09/901,280	2031
B4	Reducing KTC Noise In 3T and 5T CMOS APS	Provisional Patent Application Serial No. 60/281,603	2102
85	Reference Voltage Stabilization In CMOS Sensors	Patent Application Filed 10/12/01 Serial No. pending	2109
86	Low Power Differential Charge Mode Readout Circuit, Pipelined Gain Stage, And Pipelined ADC For CMOS Active Pixel Sensors	Provisional Patent Application Serial No. 60/280,589	2110
87	A New Row Driver Circuit For CMOS APS Using Shared Row-Reset Pixels And Charge Pump Boosting Circuit	Patent Application Serial No. 09/876,848	2111
88	Temperature Sensor Using The Image Read-Out Signal Chain Of An Active Pixel Image Sensor Having Double Sampling Of A Pixel Reset Voltage And A Pixel Image Voltage Level	Provisional Patent Application Serial No. 60/306,718	2112
89	Method For Optimizing Microlens/CFA/Pixel Cooperative Performance In Image Sensors	Provisional Patent Application Serial No. 60/286,908	2113
90	On-Chip ADC Test for Image Sensors	Provisional Patent Application Serial No. 60/313,122	2115
91	Variable Pixel Clock Electronic Shutter Control Algorithm For Corruption-Free Image Stream During Pixel Speed Changes	Provisional Patent Application Serial No. 60/306,744	2118
92	An Architecture For Increased Dynamic Range In CMOS APS	Provisional Patent Application	2119

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		Serial No. 60/607,514	
93	Flexy-Power Amplifier. A New Amplifier With Built-In Power Management	Provisional Patent Application Serial No. 60/307,513	2120

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				Examiner Name	Not Yet Assign	ied	
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